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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,477	01/19/2001	Klan Teng Eng	TI-22944.2	2137

7590 11/02/2004  
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EXAMINER

MITCHELL, JAMES M

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/766,477	Applicant(s) ENG ET AL.	
	Examiner James M. Mitchell	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 21-25 and 27-36 is/are pending in the application.
- 4a) Of the above claim(s) 29-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-25 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This office action is response to the request for continued examination filed April 19, 2004.

#### ***Election/Restrictions***

Newly submitted claims 29-36 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the claims are drawn to a product while the previously rejected claims are drawn to a process.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 29-36 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21-25, 27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Cotues et al. U.S. 5,239,447).

Cotues (Fig 4, 5) discloses a process of providing a high density module produced by a process comprising the steps of: providing a circuit board (44) having a substantially planar top surface for connection to at least one integrated circuit package (40,); providing an integrated circuit package having a pair of opposing major surfaces (Regions near 40,84) and at least one edge surface (region near 78) disposed between said opposing major surfaces, one of said at least one edge surface having at least one electrical terminal (24) disposed thereon; and electrically connecting (i.e. 48) said at least one electrical terminal on said at least one edge surface of said integrated circuit package to said top surface of said printed circuit board at an acute angle with said top surface of said printed circuit board; (cl. 22) a step of electrically connecting at least two said integrated circuit packages to said circuit board at a said edge (Fig 4); (cl. 23) and a step of disposing a solder ball ( )Col. 7, Lines 49-51) between said side surface terminal of said integrated circuit package and said top of said circuit board; (col. 24) solder columns (Fig. 1, item 13) between said integrated circuit and said top of said circuit board; (cl. 25) further including the step of integrally attaching at least three tabs (pads, 4, 24, 54 etc. are projections used to identify/align package and therefore is a tab) package to said circuit board (cl. 27) said package is further defined as being connected at an acute angle between 30 and less than 90 degrees to said circuit board; (cl. 28) wherein said at least one edge surface (i.e. surface crossing to parallel surfaces; shown in Fig 5) is four edge surfaces (Fig 2), each of said four edge surfaces disposed between said major surfaces (parallel surfaces (i.e. regions close to lines indicating 40,84) to form a closed package with said major surfaces.

### ***Interference Request***

In order to aid and expedite prosecution of the application, even if entry of the products claims were proper, applicant request to invoke an interference based off copied claim 36 from Rine (U.S 6,418, 033) would be impermissible, because applicant has not satisfied the requirements set forth under M.P.E.P section 2603, which reads in part that an interference between an application and a patent cannot be declared if:

The applicant was not claiming the same or substantially the same invention as claimed in the patent within 1 year after the date on which the patent was issued ( 35 U.S.C. 135(b); see also MPEP § 2307); ...The fact that the patent may disclose subject matter claimed by the applicant is not a basis for interference if the patent does not claim that subject matter.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jmm  
October 29, 2004



CARL WHITEHEAD, JR.  
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